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United States Department of Agriculture
Agricultural Research Service
Washington 25, D. C.

Distribution Survey - Cotton Stem Moth

Platyedra vilella Zell., Family Gelechiidae

Cooperating State and Federal entomologists in 1953 made many observations in the eastern and southern United States in an effort to determine the distribution of the cotton stem moth. These observations resulted in the extension of the known distribution of the pest to two additional states and showed it to be widely distributed on Long Island, New York. Except for Long Island, new locations were Mamaroneck, N. Y., Branford and New Britain, Conn.; and Brockton and Manchester, Mass. No finds were made south or west of Long Island although an abundant supply of favored host plants occurs in many states in both directions.

The insect was first discovered on Long Island by Mr. J. H. Mahaney, a Plant Quarantine Inspector, at the Port of New York. It is a close relative of the pink bollworm, Pectinophora gossypiella Saund., and the hollyhock seed moth, Platyedra malvella Hb., which is not known to occur in the United States.

The cotton stem moth is primarily a pest of hollyhock or other plants of the genus Althaea. However, cotton grown adjacent to these wild hosts may be infested and damaged by second-generation larvae. It is because of the insect's known relationship to cotton that it is important to determine quickly its distribution in this country.

The following information is supplied to assist cooperators in making observations and collections to detect this pest.

Description: Adult: Small, light brown moths having a wing spread of about 18 mm. Similar to many other species of Microlepidoptera, when at rest the wings are characteristically folded over the abdomen.

Larva: Mature larva is cylindrical and about 13 mm. long, creamy white with a dark brown head and prothoracic shield. Fresh specimens may be somewhat pink in color dorsally. In 1953 many of the larvae collected had wine-colored prothoraces. They may be found feeding in the seeds or stems of hollyhock or related plants.

Pupa: Brown and smooth, 8-10 mm. in length and usually found in the soil. Some may be found in trash or in the infested parts of host plants.

Known Distribution: Iran, Iraq, Asia Minor, France, Morocco, Southern Russia, England, Central and Southern Europe, West Central and Southwest Asia, North Africa and areas of New York, Connecticut, and Massachusetts. . .

Hosts: Malvaceous plants including:

1. Gossypium spp. -- cotton
2. Althaea nudiflora
3. " officinalis -- marsh mallow
4. " rosea -- hollyhock
5. Malva sylvestris -- high mallow
6. Lavatera arborea -- velvet tree mallow
7. " trimestris -- herb tree mallow

Damage: In 1929 in Morocco P. vilella attacked ovaries, flower buds, and capsules of cotton. In 1932 in Iran cotton was attacked by second and later generation larvae. Fruit bearing organs and sometimes young stems were damaged. In 1926-1928 in Uzbekistan, Southern Russia, first generation larvae fed on Althaea officinalis leaf tips and later mined the stems. Second-generation larvae fed in the same manner on cotton. Infested Althaea and cotton plants became dwarfed and spread horizontally. At Mineola, N. Y. in 1951 and 1952 larvae fed in hollyhock, eating round holes through the seeds in the capsular fruit. Whether there was more than one generation or whether other parts of the plant were damaged is not known.

Recognition of Infested Plants: Larvae may be found boring in flower buds or crawling around inside the flowers. Generally the infestation is in the capsular fruit or seed pod with the capsule being riddled with large tunnels running completely through it. The stem end of the capsule may have a tunnel running into the fruit. Occasionally there will be no surface evidence of infestation. At such times it is suggested that a few capsules be stripped off the plants and broken in two to look for damage or larvae. Those capsules that appear to be dry or are brown in color are most likely to be infested. The larva generally eats a hole through each seed in the capsule. The hole is at the base of the seed. At Mineola, N. Y., many plants had two thirds or more of all capsules damaged or infested with living larvae.

Survey: Infestations are most readily detected at the time seed pods are beginning to form or later. It is also possible to detect infestations during the flowering stage of the plant. Main stem boring usually occurs after the larvae leave the seed pods to pupate. It is suggested that all persons interested in helping to determine the distribution of P. vilella start observations late in May or early in June, dependent upon plant development in the area. Surveys may be confined to hollyhock rather than all of the listed hosts. Lepidopterous larvae mining stems or fruits of hollyhock or related plants should be collected. The larvae should be preserved in 70 percent alcohol and properly labeled as to locality and date of collection, host plant, collector, and other appropriate information. It would be helpful if the collector would furnish a short statement relative to the part of the plant being damaged. Specimens and brief reports telling where observations have been made, regardless of results, should be mailed to:

Kelvin Dorward
Economic Insect Survey Section
Plant Pest Control Branch
Washington 25, D. C.

It has been suggested that larvae will remain in much better condition if they can be briefly boiled in water (merely by holding a lighted match to the vial and rotating) before preservation in 70 percent alcohol.

Suspected material received will be determined by proper specialists and the collectors will be informed of identifications through personal letter or the "Cooperative Economic Insect Report."



